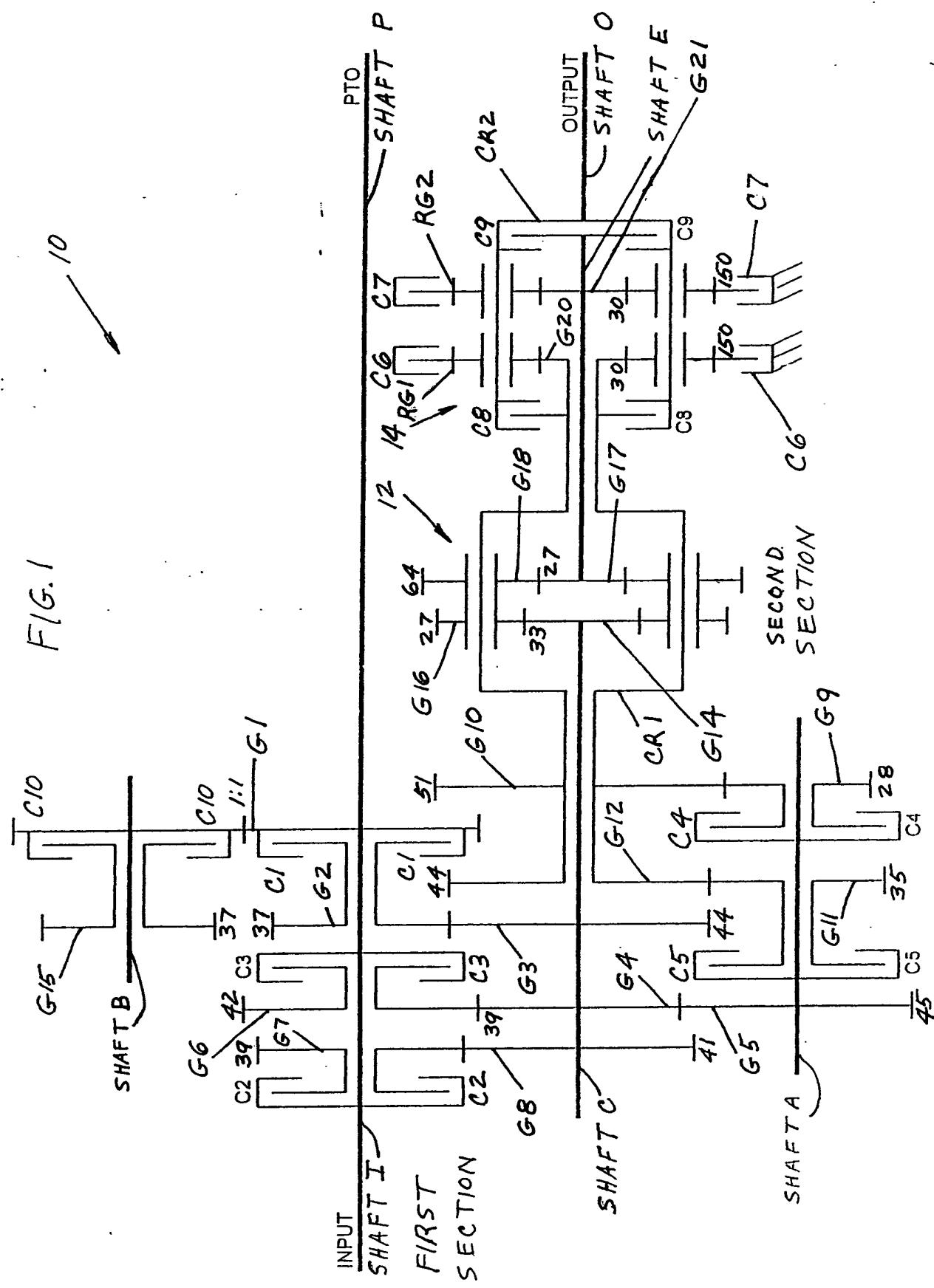


SMOOTHLY SHIFTING
MULTISPEED TRANSMISSION
Garth H. Bulgrien
Sheet 1 of 2



SMOOTHLY SHIFTING
MULTISPEED TRANSMISSION
Garth H. Bulgrien
Sheet 2 of 2

Gear		Ratio	1/Ratio	Clutches	Swaps	Step	mph	km/h	R step	R mph	R km/h
28	11H	0.528	1.892	3,4,9			37.63	60.55			
	11M	0.598	1.671	2,4,9	1	1.213	33.24	53.49			
27	10H	0.641	1.560	3,5,9			31.03	49.92			
	11L	0.677	1.478	1,4,9	1	1.132	29.39	47.28			
26	10M	0.726	1.378	2,5,9			27.41	44.10			
					1	1.131			1.213		
25	10L	0.821	1.218	1,5,9			24.23	38.98		24.23	38.98
					2	1.131					
24	9H	0.929	1.077	3,8,9			21.42	34.46			
					1	1.132			1.449		
23	9M	1.051	0.951	2,8,9			18.92	30.44			
					1	1.131					
22	9L	1.189	0.841	1,8,9			16.72	26.91		16.72	26.91
					2	1.133					
21	8H	1.347	0.742	3,5,8			14.77	23.76			
					1	1.132			1.451		
20	8M	1.525	0.656	2,5,8			13.04	20.98			
					1	1.131					
19	8L	1.725	0.580	1,5,8			11.53	18.55		11.53	18.55
					2	1.131					
18	7H	1.952	0.512	3,4,8			10.19	16.40			
					1	1.132			1.449		
17	7M	2.209	0.453	2,4,8			9.00	14.48			
					1	1.131					
16	7L	2.499	0.400	1,4,8			7.96	12.80		7.96	12.80
					2	1.132					
15	6H	2.828	0.354	3,7,8			7.03	11.32			
	5H	3.171	0.315	3,4,7	1	1.132	6.27	10.09	1.449		
14	6M	3.202	0.312	2,7,8			6.21	9.99			
	5M	3.590	0.279	2,4,7	1	1.131	5.54	8.91			
13	6L	3.622	0.276	1,7,8			5.49	8.84		5.49	8.84
	4H	3.846	0.260	3,5,7	1	1.121	5.17	8.32			
12	5L	4.061	0.246	1,4,7			4.90	7.88		4.90	7.88
					2	1.072			1.360		
11	4M	4.354	0.230	2,5,7			4.57	7.35			
					1	1.131					
10	4L	4.925	0.203	1,5,7			4.04	6.50		4.04	6.50
					2	1.131					
9	3H	5.571	0.179	3,6,7			3.57	5.74		1.449	
					1	1.132					
8	3M	6.308	0.159	2,6,7			3.15	5.07			
					1	1.131					
7	3L	7.135	0.140	1,6,7			2.79	4.48		2.79	4.48
					2	1.133					
6	2H	8.082	0.124	3,5,6			2.46	3.96		1.451	
					1	1.132					
5	2M	9.150	0.109	2,5,6			2.17	3.50			
					1	1.131					
4	2L	10.35	0.097	1,5,6			1.92	3.09		1.92	3.09
					2	1.131					
3	1H	11.71	0.085	3,4,6			1.70	2.73		1.449	
					1	1.132					
2	1M	13.26	0.075	2,4,6			1.50	2.41			
					1	1.131					
1	1L	15.00	0.067	1,4,6			1.33	2.13		1.33	2.13

FIG. 2